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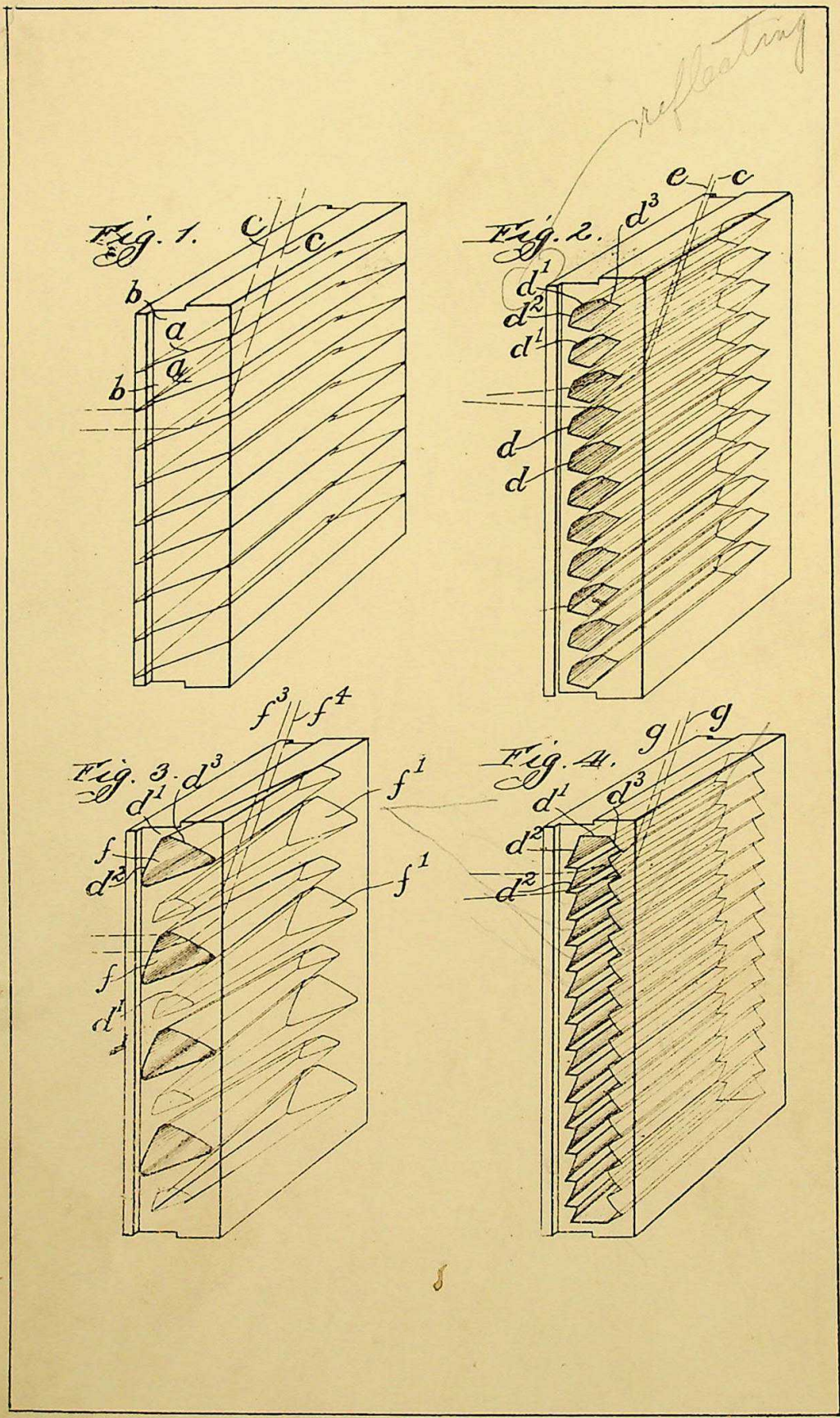
A.D. 1898. JUNE 14. Nº 13,248.

WINGER'S COMPLETE SPECIFICATION.

(1 SHEET)



[This Drawing is a reproduction of the Original on a reduced scale.]

Malby & Sons, Photo-Litho.

N° 13,248 A.D. 1898

Date of Application, 14th June, 1898—Accepted, 3rd Sept., 1898

DUPLICATE

COMPLETE SPECIFICATION.

Glass Panes for Windows and for other Illuminating Purposes.

I, OSWALD EMMERT WINGER, of Joliet, State of Illinois, United States of America, Civil Engineer, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

My invention relates to glass panes for windows and for other illuminating purposes, my object being to provide a pane having interior deflecting surfaces for deflecting and changing the direction of the rays of light passing therethrough.

In Figure 1 I have illustrated a glass pane wherein the deflecting surfaces take the form of reflecting surfaces *a a* extending longitudinally through the interior of the pane. This form of pane is preferably built up of a number of blocks of glass *b b* placed together with their faces in contact, the faces being smooth and polished whereby the upper face of each block constitutes the light reflecting surface.

I have illustrated several rays *c c* entering the receiving side of the pane, being refracted, then striking the reflecting surface and being reflected.

In Fig. 2, I have illustrated a pane provided between the receiving and discharging surfaces with a series of longitudinal openings or cavities *d d*, the upper walls of which constitute reflecting surfaces d^1 d^1, while the side walls d^2 d^3 constitute refracting surfaces. I have illustrated a ray of light *c* entering the pane and being refracted, then striking the reflecting surface d^1 and being reflected, and then passing through the discharging surface of the pane. I have also illustrated the ray *e*, which passes through the receiving surface, then through the refracting surface d^3, through the cavity to the refracting surface d^2, and then through the discharging surface of the pane.

I have illustrated the reflecting surface d^1 and the refracting surfaces d^2 d^3 as curved but they may be made all plane surfaces or one or more curved.

In Fig. 3 I have illustrated a pane wherein a series of tapering cavities *f f* extend longitudinally into the pane from one edge while another series of tapering cavities f^1 f^1 extend longitudinally into the pane from the opposite edge. The upper walls d^1 of the cavities constitute the reflecting surface, while the side walls d^2 d^3 constitute refracting surfaces. I have illustrated a ray f^3 passing through the pane and acted upon by the reflecting surface, and a ray f^4 passing through the pane and acted upon by the refracting surfaces.

In Fig. 4 I have illustrated a pane similar to that shown in Fig. 2, except that the cavities are placed so as to be joined together to thus form, in effect, a single cavity having an upper surface d^1, which may, when desired, constitute a reflecting surface, and having a series of refracting surfaces d^2, and a series of refracting surfaces d^3, one of the refracting surfaces d^2 being placed opposite each of the refracting surfaces d^3, whereby the rays may pass through both of the refracting surfaces. I have illustrated several rays *g g* entering the pane, passing through refracting surfaces, and being thereby deflected.

[*Price 8d.*]

Winger's Glass Panes for Windows and for other Illuminating Purposes.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is :—

1. A glass pane substantially as illustrated in Figure 1.
2. A glass pane substantially as illustrated in Figure 2.
3. A glass pane substantially as illustrated in Figure 3.
4. A glass pane substantially as illustrated in Figure 4.
5. A glass pane having formed therein one or more longitudinally extending cavities, the walls of which constitute a deflecting surface or surfaces, substantially as described.
6. A glass pane having formed therein one or more longitudinally extending cavities, the walls of which constitute a reflecting surface or surfaces, substantially as described.
7. A glass pane having formed therein one or more longitudinally extending cavities, the walls of which constitute refracting surfaces, substantially as described.

Dated this 13th day of June 1898.

BOTTOMLEY & LIDDLE,
154, St. Vincent Street, Glasgow, Applicant's Patent Agents.

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